

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number  
**WO 2005/056452 A1**

(51) International Patent Classification<sup>7</sup>: **B65H 54/02**  
(21) International Application Number:  
PCT/US2004/040035

(22) International Filing Date:  
30 November 2004 (30.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/526,629 3 December 2003 (03.12.2003) US

(71) Applicant (for all designated States except US): **DOW GLOBAL TECHNOLOGIES INC.** [US/US]; Washington Street, 1790 Building, Midland, MI 48674 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SEN, Ashish** [US/US]; 210 Burning Bush Lane, Midland, MI 48642 (US). **BENSASON, Selim** [TR/US]; 2347 Sheridan Road, Number 2, Houston, TX 77030 (US). **CHENG, Angus, W.** [CN/CN]; 26/F Block 4, Broadview Garden, Tsing Yi, Hong Kong (CN).

(74) Agent: **HOPPE, James, T.**; The Dow Chemical Company, Intellectual Property, P.O. Box 1967, Midland, MI 48641-1967 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **ELONGATED CROSS SECTION ELASTIC FIBERS FOR STABLE PACKAGES**

(57) Abstract: An improved process for winding an elastic fiber onto a core for forming a package and/or warp beam for use in knitting or weaving operations is disclosed. The improvement comprises forming the elastic fiber into a shape having a fiber cross section such that the width of the fiber is at least three times the thickness of the fiber prior to winding the fiber onto the supply package. Another aspect of the invention involves forming elastic fiber using an extrusion melt spinning process with a die having one or more openings which have two generally perpendicular axes, wherein one axis is at least about 1.5, preferably at least about 3 times longer than the other axis. The fiber of the present invention having the elongated cross section can be used to make improved supply packages for knitting or weaving fabric and also for making improved nonwoven structures and improved binder fibers.

WO 2005/056452 A1